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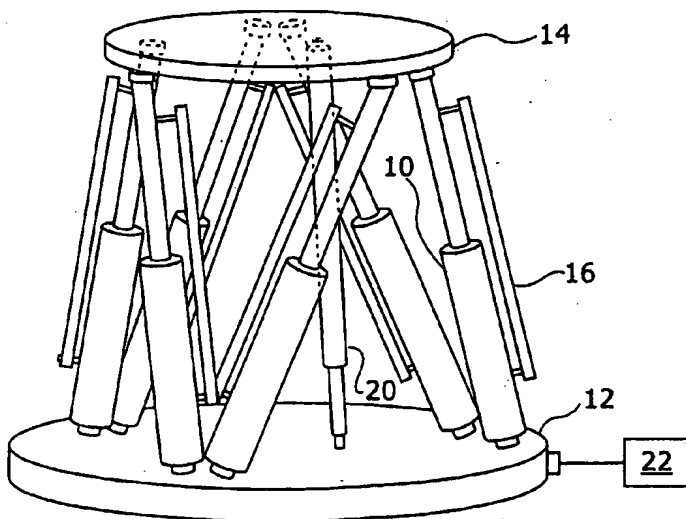
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(54) Title: VERIFICATION SYSTEM FOR ROBOT POSE .



(57) Abstract: An apparatus and method for assuring effective backup for sensor failure in robots, by utilizing a single extra sensor attached between the end actuator and the base. The single extra sensor provides absolute back-up for any single encoder failure that may occur in the system, and statistically significant back-up for any double encoder failure. A single additional sensor effectively provides the robotic system with one redundant information input to the robot control algorithm, which can be used in order to determine whether any of the other control sensors, or even the additional sensor itself, has failed and is delivering an erroneous reading, and hence to warn the operator of the failure. A single additional sensor also provides useful warning of the simultaneous failure of two sensors, since the likelihood that two sensors fail simultaneously in a mode that makes the failures undetectable, can be regarded as statistically insignificant.

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